

Coast Guard, DHS

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switch or to the coil end of a circuit breaker, except a generator which is connected to either end of a circuit breaker.

Subpart 111.59—Busways

§ 111.59-1 General.

Each busway must meet Article 368 of NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10-1).

[USCG-2003-16630, 73 FR 65198, Oct. 31, 2008]

§ 111.59-3 No mechanical cooling.

A busway must not need mechanical cooling to operate within its rating.

[CGD 94-108, 61 FR 28280, June 4, 1996]

Subpart 111.60—Wiring Materials and Methods

§ 111.60-1 Construction and testing of cable.

(a) Each marine shipboard cable must meet all the requirements for construction and identification of either IEEE 1580, UL 1309, IEC 60092-353, or NPFC MIL-C-24640A or NPFC MIL-C-24643A (all five standards incorporated by reference; see 46 CFR 110.10-1), including the respective flammability tests contained therein, and must be of a copier-stranded type.

(b) Each cable constructed to IEC 60092-353 must meet the flammability requirements of Category A of IEC 60332-3-22 (incorporated by reference; see 46 CFR 110.10-1).

(c) Medium-voltage electric cable must meet the requirements of IEEE 1580 and UL 1072 (incorporated by reference; see 46 CFR 110.10-1), where applicable, for cables rated above 5,000 volts.

(d) Electrical cable that has a polyvinyl-chloride insulation with a nylon jacket (Type T/N) must meet either UL 1309, IEEE 1580, or section 8 of IEEE 45-2002 (incorporated by reference; see 46 CFR 110.10-1).

(e) Electrical cable regardless of construction must meet, at a minimum, all of the performance and marking requirements of section 5.13 of IEEE 1580.

[USCG-2003-16630, 73 FR 65198, Oct. 31, 2008, as amended by USCG-2013-0671, 78 FR 60153, Sept. 30, 2013]

§ 111.60-2 Specialty cable for communication and RF applications.

Specialty cable such as certain coaxial cable that cannot pass the flammability test contained in IEEE 1580, test VW-1 of UL 1581, or Category A of IEC 60332-3-22 (all three standards incorporated by reference; see 46 CFR 110.10-1) because of unique properties of construction, must:

(a) Be installed physically separate from all other cable; and

(b) Have fire stops installed—

(1) At least every 7 meters (21.5 feet) vertically, up to a maximum of 2 deck heights;

(2) At least every 15 meters (46 feet) horizontally;

(3) At each penetration of an A or B Class boundary;

(4) At each location where the cable enters equipment; or

(5) In a cableway that has an A-60 fire rating.

[CGD 94-108, 61 FR 28280, June 4, 1996, as amended by USCG-2003-16630, 73 FR 65198, Oct. 31, 2008]

§ 111.60-3 Cable application.

(a)(1) Cable constructed according to IEEE 1580 must meet the provisions for cable application of section 24 of IEEE 45-2002 (both incorporated by reference; see 46 CFR 110.10-1).

(2) Cable constructed according to IEC 60092-353 or UL 1309 (both incorporated by reference; see 46 CFR 110.10-1) must meet section 24 of IEEE 45-2002, except 24.6.1, 24.6.7, and 24.8.

(3) Cable constructed according to IEC 60092-353 must be applied in accordance with IEC 60092-352 (incorporated by reference; see 46 CFR 110.10-1), Table 1, for ampacity values.

(b)(1) Cable constructed according to IEEE 1580 must be applied in accordance with Table 25, Note 6, of IEEE 45-2002.

(2) Cable constructed according to IEC 60092-353 must be derated according to IEC 60092-352, clause 8.

(3) Cable constructed according to NPFC MIL-C-24640A or NPFC MIL-C-24643A must be derated according to NAVSEA MIL-HDBK-299 (SH) (all three standards incorporated by reference; see 46 CFR 110.10-1).

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(c) Cable for special applications defined in section 24 of IEEE 45-2002 must meet the provisions of that section.

[USCG-2003-16630, 73 FR 65198, Oct. 31, 2008, as amended by USCG-2013-0671, 78 FR 60153, Sept. 30, 2013]

§ 111.60-4 Minimum cable conductor size.

Each cable conductor must be #18 AWG (0.82 mm²) or larger except—

(a) Each power and lighting cable conductor must be #14 AWG (2.10 mm²) or larger; and

(b) Each thermocouple, pyrometer, or instrumentation cable conductor must be #22 AWG (0.33 mm²) or larger.

[CGD 94-108, 61 FR 28280, June 4, 1996]

§ 111.60-5 Cable installation.

(a) Each cable installation must meet—

(1) Sections 25, except 25.11, of IEEE 45-2002 (incorporated by reference; see 46 CFR 110.10-1); or

(2) Cables manufactured to IEC 60092-353 must be installed in accordance with IEC 60092-352 (both incorporated by reference; see 46 CFR 110.10-1), including clause 8.

(b) Each cable installation made in accordance with clause 8 of IEC 60092-352 must utilize the conductor ampacity values of Table I of IEC 60092-352.

§ 111.60-7 Demand loads.

Generator, feeder, and bus-tie cables must be selected on the basis of a computed load of not less than the demand load given in Table 111.60-7.

TABLE 111.60-7—DEMAND LOADS

Type of circuit	Demand load
Generator cables	115 percent of continuous generator rating.
Switchboard bus-tie, except ship's service to emergency switchboard bus-tie.	75 percent of generating capacity of the larger switchboard.
Emergency switchboard bus-tie	115 percent of continuous rating of emergency generator.
Motor feeders	Article 430, NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10-1).
Galley equipment feeder	100 percent of either the first 50 KW or one-half the connected load, whichever is the larger, plus 65 percent of the remaining connected load, plus 50 percent of the rating of the spare switches or circuit breakers on the distribution panel.
Lighting feeder	100 percent of the connected load plus the average active circuit load for the spare switches or circuit breakers on the distribution panels.

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(c) No cable may be located in any tank unless—

(1) The purpose of the cable is to supply equipment or instruments especially designed for and compatible with service in the tank and whose function requires the installation of the cable in the tank;

(2) The cable is either compatible with the liquid or gas in the tank or protected by an enclosure; and

(3) Neither braided cable armor nor cable metallic sheath is used as the grounding conductor.

(d) Braided cable armor or cable metallic sheath must not be used as the grounding conductor.

[CGD 74-125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94-108, 61 FR 28280, June 4, 1996; USCG-2003-16630, 73 FR 65198, Oct. 31, 2008; USCG-2013-0671, 78 FR 60153, Sept. 30, 2013]

§ 111.60-6 Fiber optic cable.

Each fiber optic cable must—

(a) Be constructed to pass the flammability test contained in IEEE 1202, test VW-1 of UL 1581, or Category A of IEC 60332-3-22 (all three standards incorporated by reference; see 46 CFR 110.10-1); or

(b) Be installed in accordance with § 111.60-2.

[CGD 94-108, 61 FR 28280, June 4, 1996, as amended by USCG-2003-16630, 73 FR 65198, Oct. 31, 2008]